

## CLAIM AMENDMENTS

### IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. **(Currently amended)** A hemofiltration system to treat an inflammatory mediator related disease in a mammal including selectively combining a post adsorption ultrafiltrate stream with a filtered blood stream, comprising:

a hemofilter operable to remove ultrafiltrate from a blood stream extracted from the mammal and to create a filtered blood stream and an ultrafiltrate stream;

an adsorptive device containing at least one adsorbent material operable to receive the ultrafiltrate stream from the hemofilter and to remove a wide range of inflammatory mediators therefrom to create a post adsorption ultrafiltrate stream;

the adsorbent material selected from a group consisting of coated materials, uncoated materials, a matrix of rods, a matrix configured for convenient presentation of ultrafiltrate to adsorbent material, beads, and particulates and any combination thereof; and

tubing operably attached to the hemofilter for use in selectively combining the post adsorption ultrafiltrate stream with the filtered blood stream and the tubing returning the combined stream to the mammal.

2. (Original) The hemofiltration system of Claim 1, wherein the adsorbent material is comprised of adsorbent resins selected from a group consisting of immobilized polymyxin B , polystyrene-derivative fibers, cation exchange resins, neutral exchange resins, anion exchange resins, cellulose materials, polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, cellulose derivatives, specific antibody coated materials, specific antagonist coated materials, and any combination thereof.

3. (Original) The hemofiltration system of Claim 1, wherein the ultrafiltrate stream comprises plasma water, electrolytes, blood peptides and proteins.

4. (Original) The hemofiltration system of Claim 1, wherein the hemofilter comprises a material selected from the group of polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, and cellulose derivatives, and the jacket comprises polycarbonate.

5. (Original) The hemofiltration system of Claim 1, wherein the adsorbent material is selected from a group consisting of activated charcoal, uncharged resins, charged resins, silica, immobilized polymyxin B, anion exchange resin, cation exchange resin, neutral exchange resin, polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, cellulose derivatives, immobilized monoclonal antibodies, immobilized IM receptors, immobilized specific antagonists, and any combination thereof.

6. (Currently amended) A hemofiltration system to treat an inflammatory mediator related disease including sepsis and septic shock in a mammal, comprising:

a hemofilter operable to remove an ultrafiltrate comprising a fraction of plasma water, electrolytes, peptides and small proteins including inflammatory mediators from a blood stream extracted from the mammal and to create a filtered blood stream and an ultrafiltrate stream comprising the fraction of plasma water, electrolytes, peptides and small proteins including the inflammatory mediators;

an adsorptive device containing at least one adsorbent material operable to receive the ultrafiltrate stream from the hemofilter and to remove at least one inflammatory mediator therefrom to create a post adsorption ultrafiltrate stream;

the adsorbent material selected from a group consisting of coated materials, uncoated materials, a matrix of rods, a matrix configured for convenient presentation of ultrafiltrate to adsorbent material, beads, and particulates and any combination thereof; and

means for selectively combining the post adsorption ultrafiltrate stream with the filtered blood stream and returning the combined stream to the mammal.

7. (Original) The hemofiltration system of Claim 6, wherein the adsorbent material is comprised of adsorbent resins selected from a group consisting of immobilized polymyxin B , polystyrene-derivative fibers, cation exchange resins, neutral exchange resins, anion exchange resins, cellulose materials, polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, cellulose derivatives, specific antibody coated materials, specific antagonist coated materials, and any combination thereof.

8. (Original) The hemofiltration system of Claim 6, wherein the ultrafiltrate stream comprises plasma water, electrolytes, blood peptides and proteins.

9. (Original) The hemofiltration system of Claim 6, wherein the hemofilter comprises a material selected from the group of polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, and cellulose derivatives, and the jacket comprises polycarbonate.

10. (Original) The hemofiltration system of Claim 6, wherein the adsorbent material is selected from a group consisting of activated charcoal, uncharged resins, charged resins, silica, immobilized polymyxin B, anion exchange resin, cation exchange resin, neutral exchange resin, polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, cellulose derivatives, immobilized monoclonal antibodies, immobilized IM receptors, immobilized specific antagonists, and any combination thereof.

11. **(Currently amended)** A hemofiltration system to treat an inflammatory mediator related disease in a mammal, comprising:

a hemofilter operable to remove an ultrafiltrate with inflammatory mediators from a blood stream extracted from the mammal and to create a filtered blood stream and an ultrafiltrate stream with the inflammatory mediators;

an adsorptive device containing at least one adsorbent material operable to receive the ultrafiltrate stream from the hemofilter and to remove a wide range of the inflammatory mediators therefrom to create a post adsorption ultrafiltrate stream without the inflammatory mediators removed by the at least one adsorbent material;

the adsorbent material selected from a group consisting of coated materials, uncoated materials, a matrix of rods, a matrix configured for convenient presentation of ultrafiltrate to adsorbent material, beads, and particulates and any combination thereof;

tubing operable to combine the post adsorption ultrafiltrate stream without the inflammatory mediators removed by the at least one adsorbent material with the filtered blood stream and operable to return the combined stream to the mammal;

a first pump to transfer the post adsorption ultrafiltrate stream from the adsorptive device; and

a second pump to transfer a portion of the post adsorption ultrafiltrate stream which is not returned to the mammal to a ~~[[the]]~~ waste reservoir ~~using a second ultrafiltrate pump~~.

12. (Original) The hemofiltration system of Claim 11 wherein the adsorbent material is comprised of adsorbent resins selected from a group consisting of immobilized polymyxin B , polystyrene-derivative fibers, cation exchange resins, neutral exchange resins, anion exchange resins, cellulose materials, polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, cellulose derivatives, specific antibody coated materials, specific antagonist coated materials, and any combination thereof.

13. (Original) The hemofiltration system of Claim 11, wherein the ultrafiltrate stream comprises plasma water, electrolytes, blood peptides and proteins.

14. (Original) The hemofiltration system of Claim 11, wherein the hemofilter comprises a material selected from the group of polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, and cellulose derivatives, and the jacket comprises polycarbonate.

15. (Original) The hemofiltration system of Claim 11, wherein the adsorbent material is selected from a group consisting of activated charcoal, uncharged resins, charged resins, silica, immobilized polymyxin B, anion exchange resin, cation exchange resin, neutral exchange resin, polysulfone, polyacrylonitrile, polymethylmethacrylate, polyvinyl-alcohol, polyamide, polycarbonate, cellulose derivatives, immobilized monoclonal antibodies, immobilized IM receptors, immobilized specific antagonists, and any combination thereof.

16. (New) A hemofiltration system for treating an inflammatory mediator related disease of a mammal, the system comprising:

a first conduit adapted to direct a blood stream from the mammal to a hemofilter, the hemofilter adapted to remove an ultrafiltrate from the blood stream so as to create a filtered blood stream and an ultrafiltrate stream, the hemofilter having a molecular weight exclusion limit of greater than or equal to 69,000 Daltons;

a second conduit adapted to direct the filtered blood stream from the hemofilter back to the mammal;

a third conduit adapted to direct the ultrafiltrate stream from the hemofilter to an adsorptive device,

the adsorptive device adapted to receive the ultrafiltrate stream, to contact the ultrafiltrate stream with an adsorbent material, and to output a post adsorption ultrafiltrate stream after selectively removing at least one inflammatory mediator; and

a fourth conduit adapted to receive the post adsorption ultrafiltrate stream from the adsorptive device and to direct the post adsorption ultrafiltrate back to the mammal.

17. (New) A system according to Claim 16 wherein the fourth conduit merges with the second conduit so as to combine at least a portion of the post adsorption ultrafiltrate stream with the filtered blood stream to thereby return a combined stream to the mammal.